

WHAT IS CLAIMED IS:

1. A system for a server to determine a plurality of lattice points to be referenced to prepare correspondence defining data that defines correspondence between the amount of ink for each color used by a printing apparatus connected to a client and the value of color component in a specific color system, in which:

said client has a unit to record the original correspondence defining data which previously prescribes correspondence between the lattice points in the low-dimensional color space prescribed by less color components than the number of inks for each color and the lattice points for ink amount in the ink amount space, a client's communication unit to transmit and receive data through a two-way communication line, and a unit to transmit the original correspondence defining data to the server through the client's communication unit; and

said server has a server's communication unit to transmit and receive data through a two-way communication line, a unit to receive the original correspondence defining data through the server's communication unit, a unit to acquire correspondence between lattice points in the low-dimensional color space and lattice points in the device-independent color space by referencing the original correspondence defining data, a unit to prescribe a smoothness evaluation function which evaluates smoothness of the arrangement of lattice points in the device-independent color

space and has as a variable the information about the position of lattice points in the low-dimensional color space, a unit to optimize the arrangement of lattice points in the device-independent color-space by improving the rating of the smoothness evaluation function, with the information about the position of lattice points varied, and a unit to determine lattice points for the correspondence defining data by associating the amount of ink for each color corresponding to lattice points in the low-dimensional color space specified by the information about the position of lattice points in the optimized state with lattice points in the low-dimensional color space prescribed by the original correspondence defining data.

2. The system of Claim 1 for determining lattice points for the correspondence defining data, in which said server has a unit to transmit data indicating lattice points for the correspondence defining data through the server's communication unit, and said client has a unit to receive data indicating lattice points for the correspondence defining data through the client's communication unit, and a unit to prepare the correspondence defining data that associates the amount of ink with the value of color component in the specific color system by means of colorimetric values obtained by examining with a prescribed colorimeter the output of printing with an ink amount prescribed by the received data of lattice points for the correspondence defining data.

3. The system of Claim 1 for determining lattice points for the correspondence defining data, in which said server has a unit to prepare the correspondence defining data that associates the amount of ink with the value of color component in the specific color system by means of colorimetric values obtained by examining with a prescribed colorimeter the output of printing with an ink amount prescribed by data indicating lattice points for the correspondence defining data, and a unit to transmit the prepared correspondence defining data through the server's communication unit, and said client has a unit to receive the correspondence defining data through the client's communication unit.

4. A client that requests a server to determine a plurality of lattice points to be referenced to prepare correspondence defining data that defines correspondence between the amount of ink for each color used by a printing apparatus and the value of color component in a specific color system, said client comprising a unit to record the original correspondence defining data which previously prescribes correspondence between the lattice points in the low-dimensional color space prescribed by less color components than the number of inks for each color and the lattice points for ink amount in the ink amount space, a client's communication unit to transmit and receive data through a two-way communication line, and a unit to transmit the original correspondence defining data to the server

through the client's communication unit.

5. A server that determines a plurality of lattice points to be referenced to prepare correspondence defining data that defines correspondence between the amount of ink for each color used by a printing apparatus and the value of color component in a specific color system, said server comprising:

a server's communication unit to transmit and receive data through a two-way communication line,

a unit to receive through the server's communication unit the original correspondence defining data which previously prescribes correspondence between the lattice points in the low-dimensional color space prescribed by less color components than the number of inks for each color and the lattice points for ink amount in the ink amount space,

a unit to acquire correspondence between lattice points in the low-dimensional color space and lattice points in the device-independent color space by referencing the original correspondence defining data,

a unit to prescribe a smoothness evaluation function which evaluates smoothness of the arrangement of lattice points in the device-independent color space and has as a variable the information about the position of lattice points in the low-dimensional color space,

a unit to optimize the arrangement of lattice points in the device-independent color-space by improving the rating of the smoothness evaluation function, with the information

about the position of lattice points varied, and a unit to determine lattice points for the correspondence defining data by associating the amount of ink for each color corresponding to lattice points in the low-dimensional color space specified by the information about the position of lattice points in the optimized state with lattice points in the low-dimensional color space prescribed by the original correspondence defining data.

6. A method for determining in a server a plurality of lattice points to be referenced to prepare correspondence defining data that defines correspondence between the amount of ink for each color used by a printing apparatus connected to a client and the value of color component in a specific color system, in which:  
said client records in a prescribed recording medium the original correspondence defining data which previously prescribes correspondence between the lattice points in the low-dimensional color space prescribed by less color components than the number of inks for each color and the lattice points for ink amount in the ink amount space and sends it to the server through a two-way communication line, and said server receives the original correspondence defining data, acquires correspondence between lattice points in the low-dimensional color space and lattice points in the device-independent color space by referencing the original correspondence defining data, prescribes a smoothness evaluation function which evaluates smoothness of the ar-

range of lattice points in the device-independent color space and has as a variable the information about the position of lattice points in the low-dimensional color space, optimizes the arrangement of lattice points in the device-independent color-space by improving the rating of the smoothness evaluation function, with the information about the position of lattice points varied, and determines lattice points for the correspondence defining data by associating the amount of ink for each color corresponding to lattice points in the low-dimensional color space specified by the information about the position of lattice points in the optimized state with lattice points in the low-dimensional color space prescribed by the original correspondence defining data.

7. A method of requesting a server to determine a plurality of lattice points to be referenced to prepare correspondence defining data that defines correspondence between the amount of ink for each color used by a printing apparatus and the value of color component in a specific color system, said method comprising recording in a prescribed recording medium the original correspondence defining data which previously prescribes correspondence between the lattice points in the low-dimensional color space prescribed by less color components than the number of inks for each color and the lattice points for ink amount in the ink amount space, and transmitting the original correspondence defining data to the server through a two-way commu-

nication line.

8. A method for determining a plurality of lattice points to be referenced to prepare correspondence defining data that defines correspondence between the amount of ink for each color used by a printing apparatus and the value of color component in a specific color system, said method comprising:

acquiring through a two-way communication line the original correspondence defining data which previously prescribes correspondence between the lattice points in the low-dimensional color space prescribed by less color components than the number of inks for each color and the lattice points for ink amount in the ink amount space, acquiring correspondence between the lattice points in the low-dimensional color space and the lattice points in the device-independent by referencing the original correspondence defining data, prescribes a smoothness evaluation function which evaluates smoothness of the arrangement of lattice points in the device-independent color space and has as a variable the information about the position of lattice points in the low-dimensional color space, optimizing the arrangement of lattice points in the device-independent color-space by improving the rating of the smoothness evaluation function, with the information about the position of lattice points varied, and determining lattice points for the correspondence defining data by associating the amount of ink for each color corresponding to lattice

points in the low-dimensional color space specified by the information about the position of lattice points in the optimized state with lattice points in the low-dimensional color space prescribed by the original correspondence defining data.

9. A program product for a server to determine a plurality of lattice points to be referenced to prepare correspondence defining data that defines correspondence between the amount of ink for each color used by a printing apparatus connected to a client and the value of color component in a specific color system, said program product permitting said client to realize a feature to record the original correspondence defining data which previously prescribes correspondence between the lattice points in the low-dimensional color space prescribed by less color components than the number of inks for each color and the lattice points for ink amount in the ink amount space, a client's communication feature to transmit and receive data through a two-way communication line, and a feature to transmit the original correspondence defining data to the server through the client's communication feature; and said program product permitting said server to realize a server's communication feature to transmit and receive data through a two-way communication line, a feature to receive the original correspondence defining data through the server's communication feature, a feature to acquire correspondence between lattice points in the low-dimensional



color space and lattice points in the device-independent color space by referencing the original correspondence defining data, a feature to prescribe a smoothness evaluation function which evaluates smoothness of the arrangement of lattice points in the device-independent color space and has as a variable the information about the position of lattice points in the low-dimensional color space, a feature to optimize the arrangement of lattice points in the device-independent color-space by improving the rating of the smoothness evaluation function, with the information about the position of lattice points varied, and a feature to determine lattice points for the correspondence defining data by associating the amount of ink for each color corresponding to lattice points in the low-dimensional color space specified by the information about the position of lattice points in the optimized state with lattice points in the low-dimensional color space prescribed by the original correspondence defining data.

10. A program product that requests a server to determine a plurality of lattice points to be referenced to prepare correspondence defining data that defines correspondence between the amount of ink for each color used by a printing apparatus and the value of color component in a specific color system, said program product permitting a client computer to realize a feature to record the original correspondence defining data which previously prescribes correspondence between the lattice points in the low-

dimensional color space prescribed by less color components than the number of inks for each color and the lattice points for ink amount in the ink amount space, a client's communication feature to transmit and receive data through a two-way communication line, and a feature to transmit the original correspondence defining data to the server through the client's communication feature.

11. A program product for determining a plurality of lattice points to be referenced to prepare correspondence defining data that defines correspondence between the amount of ink for each color used by a printing apparatus and the value of color component in a specific color system, said program product permitting a server computer to realize:

a server's communication feature to transmit and receive data through a two-way communication line,

a feature to receive through the server's communication feature the original correspondence defining data which previously prescribes correspondence between the lattice points in the low-dimensional color space prescribed by less color components than the number of inks for each color and the lattice points for ink amount in the ink amount space,

a feature to acquire correspondence between lattice points in the low-dimensional color space and lattice points in the device-independent color space by referencing the original correspondence defining data,

a feature to prescribe a smoothness evaluation function which evaluates smoothness of the arrangement of lattice points in the device-independent color space and has as a variable the information about the position of lattice points in the low-dimensional color space,

a feature to optimize the arrangement of lattice points in the device-independent color-space by improving the rating of the smoothness evaluation function, with the information about the position of lattice points varied, and

a feature to determine lattice points for the correspondence defining data by associating the amount of ink for each color corresponding to lattice points in the low-dimensional color space specified by the information about the position of lattice points in the optimized state with lattice points in the low-dimensional color space prescribed by the original correspondence defining data.